

Amendments to the Claims

Please cancel claims 1-31 without prejudice, and add new claims 32-62, as follows:

Claims 1-31 (cancelled).

Claim 32 (new). Apparatus for providing optical radiation comprising:

a pump source and at least one first amplifying waveguide, and wherein the first amplifying waveguide emits optical radiation in excess of 1400nm when pumped by the pump source.

Claim 33 (new). Apparatus according to claim 32 wherein:

the pump source includes a plurality of laser diodes and at least one second amplifying waveguide;

the first amplifying waveguide is pumped by the second amplifying waveguide, and the second amplifying waveguide is pumped by the laser diodes; and

the second amplifying waveguide is configured to improve the beam quality of radiation emitted by the laser diodes.

Claim 34 (new). Apparatus according to claim 33 wherein the pump source includes at least one multimode beam combiner for combining optical radiation emitted by the laser diodes.

Claim 35 (new). Apparatus according to claim 33 further comprising at least one first beam combiner configured to combine optical radiation emitted by the second amplifying waveguides.

1 Claim 36 (new). Apparatus according to claim 33 wherein the first amplifying
2 waveguide comprises a first optical fibre.

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4 Claim 37 (new). Apparatus according to claim 36 wherein the first optical fibre
5 comprises a region containing a first rare-earth dopant.

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7 Claim 38 (new). Apparatus according to claim 37 wherein the first rare earth
8 dopant is selected from the group consisting of erbium, holmium and thulium.

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10 Claim 39 (new). Apparatus according to claim 38 wherein the first rare earth
11 dopant is co-doped with ytterbium.

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13 Claim 40 (new). Apparatus according to claim 37 wherein the first rare-earth
14 dopant is pumped substantially at the peak of its absorption band.

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16 Claim 41 (new). Apparatus according to claim 36 wherein the first optical fibre
17 comprises a core and a cladding.

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19 Claim 42 (new). Apparatus according to claim 36 wherein the first optical fibre is
20 single mode.

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22 Claim 43 (new). Apparatus according to claim 36 wherein the first optical fibre is
23 multi mode.

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25 Claim 44 (new). Apparatus according to claim 36 wherein the first optical fibre
comprises a plurality of cores.

1 Claim 45 (new). Apparatus according claim 33 wherein the second amplifying
2 waveguide comprises a second optical fibre.

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4 Claim 46 (new). Apparatus according to claim 45 wherein the second optical
5 fibre comprises a region containing a second rare-earth dopant.

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7 Claim 47 (new). Apparatus according to claim 45 wherein the second optical
8 fibre comprises a core and a cladding.

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10 Claim 48 (new). Apparatus according to claim 45 further comprising a grating
11 written into at least one of the core and the cladding.

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13 Claim 49 (new). Apparatus according to claim 45 wherein the second optical
14 fibre is single mode.

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16 Claim 50 (new). Apparatus according to claim 45 wherein the second optical
17 fibre is multi mode.

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19 Claim 51 (new). Apparatus according to claim 45 wherein the second optical
20 fibre comprises a plurality of cores.

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22 Claim 52 (new). Apparatus according to claim 33 further comprising means to
23 change the wavelength of radiation emitted by the second amplifying waveguide.

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25 (Continued on next page.)

1 Claim 53 (new). Apparatus according to claim 52 wherein the means to change
2 the wavelength of radiation emitted by the second amplifying waveguide is one of a
3 wavelength tuneable reflector, an optical switch, a source of optical radiation, or a
4 tuneable grating.

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6 Claim 54 (new). Apparatus according to claim 53 wherein the tuneable grating is
7 one of thermally tuned or tuned by an actuator.

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9 Claim 55 (new). Apparatus according to claim 33 wherein the apparatus is
10 configured such that the optical radiation emitted by the first amplifying waveguide
11 has a higher brightness when the second amplifying optical fibre emits at a first
12 wavelength.

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14 Claim 56 (new). Apparatus according to claim 32 wherein the pump supplies
15 pump radiation for in-band pumping the first amplifying waveguide.

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17 Claim 57 (new). Apparatus according to claim 56 wherein both the pump
18 wavelength and the wavelength of the optical radiation are between 1400nm and
19 2500nm.

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21 Claim 58 (new). Apparatus according to claim 32 wherein the pump source
22 comprises a broad stripe laser diode.

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24 Claim 59 (new). Apparatus according to claim 32 wherein the optical radiation is
25 coupled to a scanner.

1 Claim 60 (new). Apparatus according to claim 59 further comprising a controller
2 configured to synchronize the optical radiation with the scanner.

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4 Claim 61 (new). Apparatus according to claim 32, wherein the apparatus is in the
5 form of an amplifier, a laser, a master oscillator power amplifier, a Q-switched laser,
6 a source of amplified spontaneous emission, or a continuous wave laser.

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8 Claim 62 (new). Apparatus according to claim 32 wherein the apparatus is in the
9 form of a laser for material processing.

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11 (End of amendments.)

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